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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,844	04/02/2004	Christophe Le Troadec	250962US3X	9690
22850	7590	06/09/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ESHETE, ZELALEM	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/815,844	LE TROADEC ET AL.	
	Examiner	Art Unit	
	Zelalem Eshete	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the amendment filed on 5/1/2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17,20,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swars (5,447,385) in view of Fujii et al. (5,987,973).

Regarding claims 1,8,14,20,21: Swars disclose a camshaft for an engine or an engine including a camshaft (see figure 1; numeral 2), said camshaft comprising a support shaft carrying in the region thereof a camshaft element for co-rotation therewith (see numeral 1), said camshaft element being captured on said support shaft by a head of a rivet formed from plastic deformation of said end of said support shaft (see figure 1). Swars further discloses said "rivet head" is formed from a deformation zone of said support shaft (see figure 1).

Swars fails to disclose a support shaft carrying in the region of one end thereof and deformation zone overhangs said camshaft element when said camshaft element is in place and its arrangement.

Fujii teaches a cam element on a support shaft carrying in the region of one end thereof (see figure 6). Fujii teaches such arrangement for camshaft angle sensor realization (see numeral 32e). Fujii further teaches "overhangs" said camshaft element when said camshaft element is in place (see numeral 35). Fujii further teaches the "head" contacts a portion of the camshaft element other than a side wall defining an opening in the camshaft element through which the end of the shaft is disposed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Swars' device by providing cam element at the end thereof as taught by Fujii in order to pick up the camshaft angle signal as taught by Fujii.

As to the method of riveting, a product by process claim is rejected over a prior art product that appears to be identical, although produced by a different process, the burden is upon the applicants to come forward with evidence establishing an unobvious difference between the two. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983)

Regarding claim 15: Swars disclose a method of producing a camshaft for an engine (see figure 1), the method including: (a) providing a support shaft adapted to support a camshaft element (see numeral 2) (b) providing on said portion a camshaft element for co-rotation with said support shaft (see numeral 1); and (c) capturing said camshaft element onto said support shaft by plastically deforming a deformation zone of said end portion into a radially extending rivet head (see figure 1).

Swars fails to disclose a support shaft carrying in the region of one end thereof.

Fujii teaches a cam element on a support shaft carrying in the region of one end thereof (see figure 6). Fujii teaches such arrangement for camshaft angle sensor realization (see numeral 32e).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Swars' device by providing cam element at the end thereof as taught by Fujii in order to pick up the camshaft angle signal as taught by Fujii.

Regarding claims 2,16: Fujii discloses providing a hollow portion defined in said camshaft; said support shaft includes a hollow portion extending inwardly from said end (see figure 6).

Regarding claim 3,17: Swars discloses said support shaft comprises a tube or using a tube for said support shaft (see figure 1).

Regarding claim 3,17: Fujii discloses said support shaft comprises a tube or using a tube for said support shaft (see figure 6).

Regarding claims 4-7: As to the manufacturing processes, a product by process claim is rejected over a prior art product that appears to be identical, although produced by a different process, the burden is upon the applicants to come forward with evidence establishing an unobvious difference between the two. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983).

Regarding claim 9: Swars as modified above discloses the claim limitation as recited above; and Fujii further discloses a hollow rim at said end (see figure 6).

Regarding claim 10: Fujii discloses the camshaft element comprises a rotation sensor target member (see figure 6).

Regarding claim 11: Fujii discloses said camshaft element comprises a substantially planar target member (see figure 6).

Regarding claim 12: Fujii discloses said camshaft element comprises a drive member configured to transfer rotational drive to or from said camshaft (see figure 3).

Regarding claim 13: Fujii discloses said camshaft element is formed from a sheet or plate material (see figure 6).

3. Claim 18,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swars (5,447,385) in view of Fujii et al. (5,987,973) as applied to claim 15 above, and further in view of Cooper (4,512,441).

Swars as modified above discloses the claimed invention; however fails to disclose using radial cold flow forming technique or an orbital or daisy riveting technique.

However Cooper teaches using radial cold flow forming technique or an orbital or daisy riveting technique and using such technique has the advantage of avoiding cracking (see column 10, lines 46 to 60).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Swars as modified above by using the techniques as taught by Cooper in order to avoid cracking as taught by Cooper.

Response to Arguments

4. Applicant's arguments filed 5/1/2006 have been fully considered but they are not persuasive.

5. With respect to applicant's argument on pages 6,7: Though the reference discloses additional reinforcement, such disclosure doesn't disqualify the reference in light of the claim language that has a transition phrase "comprising". Swars discloses the abrasively acting particles reinforce the connection (see column 4, lines 22 to 26). Therefore, Swars discloses the claimed invention as recited above, in addition to additional reinforcement measures for a better connection.

6. With respect to applicant's argument on pages 7,8: the claimed "head of a rivet" is interpreted in light of its definition as is given by claim 8. Accordingly Swars in view of Fujii discloses a deformation zone of said support shaft, which deformation zone overhangs said camshaft element when said camshaft element is in place as recited above.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

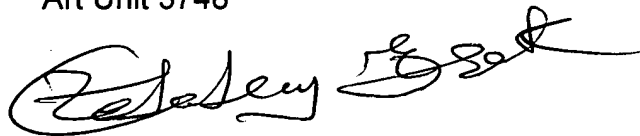
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (571) 272-4860. The examiner can normally be reached on Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete
Examiner
Art Unit 3748

A handwritten signature in black ink, appearing to read 'Zelalem Eshete', followed by a stylized flourish.


THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700